

Editorial Commentary: Outcomes in Arthroscopic Rotator Cuff Repairs: Are We Treating Patients or Radiographs?



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Abstract: Rotator cuff tears are among the most common disorders of the shoulder girdle requiring surgical intervention, and it is no surprise that orthopaedic surgeons have searched far and wide for means to improve on rotator cuff repair outcomes. Radiological parameters such as the critical shoulder angle have recently emerged and have been associated with the presence of degenerative rotator cuff tears. However, their true impact on postoperative outcomes are still unclear. Although radiological parameters, because of their objectivity, will always remain a critical part of a surgeon's preoperative assessment, we must remember that ultimately we are treating patients and not radiographs.

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Recent studies have attempted to deduce factors that influence healing and clinical outcomes after rotator cuff repair. As with most orthopaedic procedures, attention has shifted from variations in surgical technique and implant design to more "bespoke" care; i.e., the evaluation of patient-related factors and their impact on postoperative outcomes. These factors range from medical comorbidities, such as diabetes mellitus and osteoporosis, to more specific anatomical features, such as scapular geometry.¹

Sheean, de SA, Woolnough, Cognetti, Kay, and Burkhart² evaluate the impact of a recent radiological parameter, the critical shoulder angle (CSA), in a well-executed study entitled "Does an Increased Critical Shoulder Angle Affect Retear Rates and Clinical Outcomes After Primary Rotator Cuff Repair? A Systematic Review." After combing through the literature, the authors examined 6 studies on CSA and concluded that rotator cuff re-tear rates were higher in patients with larger CSA; of the 6 studies, 1 by Gerber et al.³ further

described the safety of arthroscopic correction of the CSA through lateral acromioplasty as an adjunct to rotator cuff repair, but did not report its impact on clinical outcomes in comparison to a control group.

Herein lies the controversy. Generally, peer-reviewed literature, including our own 2017 publication,⁴ shows no solid evidence to suggest that preoperative radiographic parameters such as the CSA or acromiohumeral index have an impact on postoperative outcomes.⁵ Furthermore, there is no high-level evidence we are aware of to suggest that surgical correction of these parameters would improve the aforementioned clinical outcomes.

On the other hand, the literature linking re-tear rates to postoperative outcomes appears mixed at best. Oh et al.⁶ followed up on 78 patients after rotator cuff repair with computed tomographic arthrography and concluded that although rotator cuff repair brought significant functional improvement, the functional outcomes did not correlate with anatomic outcomes. A smaller study by Jost et al.⁷ examining structural failure of rotator cuff repair suggested that an attempt at rotator cuff repair significantly decreased pain and improved function despite failure of the repair construct. Yet a recent meta-analysis by Yang et al.⁸ concluded that patients with a full-thickness rotator cuff re-tear exhibited significantly lower clinical outcome scores and strength compared with patients

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The authors report no conflicts of interest in the authorship and publication of this article. Full ICMJE author disclosure forms are available for this article online, as [supplementary material](#).

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0749-8063/19633/\$36.00

<https://doi.org/10.1016/j.arthro.2019.05.033>

with an intact cuff. Unsurprisingly, the jury is still out with regard to the clinical impact of cuff retears.

We believe that surgeons tend to lend great importance to radiographic parameters and retear rates, as they are tangible and objective, compared with patient-reported outcome measures (PROMs). Furthermore, current existing PROMs may not be sensitive enough to pick up small changes in outcomes brought about by minor tweaks in surgical technique. But focusing on purely objective outcomes may be an outdated ideology; in joint arthroplasty, PROMs, rather than implant survivorship, have become the new metric by which surgeons determine the success of their surgery.⁹ Arthroscopic shoulder surgery appears to be headed in the same direction, and rightfully so.¹⁰

In our humble opinion, the orthopaedic community has not yet put the pieces of the puzzle together. We are slowly identifying separate factors associated with postoperative outcomes, but the edges of these pieces do not yet fit together. Although the identification of CSA as a factor associated with increased retear rates is indeed a good start, there remains much to be explained when it comes to the outcomes of rotator cuff surgery. Until then, we believe that no strong recommendations can be made with regard to adjunct procedures, such as lateral acromioplasty, that aim to reduce the CSA. Importantly, as surgeons, we must remember not to miss the forest for the trees: we are ultimately treating patients, and not just radiographs.

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